Clouds viewed as attractive, effective option for computing

Users link to servers miles away to access hardware, software, other services

By MIKE COSTANZA

More and more businesses may find themselves in a cloud in the coming years, one with a silver lining of efficient, secure and cost-effective computing services.

Cloud computing gives businesses, organizations or individuals access to the computer hardware, software and services they need via the Internet. Users link to system servers through a connection that can be so fast and seamless that machines thousands of miles away seem as close as the next room.

The technology service is expected to revolutionize business computing, just as long-distance power lines and alternating current did years ago.

"Cloud computing is simply a new way of delivering and consuming business applications over the Web," says Andrew Leigh, San Francisco-based director of product marketing for force.com platforms at Salesforce.com. The company offers cloud computing firm services to clients in Rochester and nationwide.

From big names like Microsoft Corp., IBM Corp. and Google Inc. to smaller, local firms, cloud computing has become an attractive arena for a mix of players. These companies offer extensive communications, customer relationship management, data storage and security, and other Internet-based services to businesses.

Attractive option

Under the traditional computing model, businesses buy or lease their own hardware, software and Internet access and hire information technology professionals to make sure systems run properly.

"There's a lot of overhead that goes into that, in terms of space, energy, depreciation and the expertise you've got to have in your local staff," says Michael Scott,

professor of computer science at the University of Rochester.

To cut costs, many businesses have sought to outsource as many of those functions as possible. For example, a company might hire a consultant to service its computer system by the hour or for a monthly fee. To those who use it, the physical location of a computer or system has become much less important over time than its function.

"Quite honestly, you don't care about your hardware; you just want to be able to get at what your hardware is giving you," says Tim Trueblood, chief technology officer and founder of Extradev Inc., a Rochester firm that provides cloud computing services.

At the same time, technological advances and other changes to computing have largely eliminated the need for proximity to a server. Rapid increases in Internet speed and bandwidth—the amount of data the net can accommodate—now allow servers to be great distances from customers, while a single server can meet the computing needs of multiple users.

"The host company—the company that rents out computer time—runs a program on every one of their computers that pretends to be multiple computers," UR's Scott explains.

The effect is called virtualization. The virtual computer program presents a different slice of its server's capacity to each user, complete with that user's operating system, other software and data. Scott says software firewalls prevent individual users from accessing the other slices that occupy the physical server.

Software marketing changes also have helped make cloud computing more feasible.

"Instead of buying Microsoft Office for $500 every three years or so, you can get a service provider license and rent it to customers on a monthly basis," says Joe Oster, president of Structured Technologies Inc, a Rochester firm that provides cloud computing services.

By this means, cloud computing firms can provide the latest editions of those pro-

grams to their customers for a monthly fee that is a fraction of the cost of the original.

As a result of these changes, cloud computing has taken on a form much like that of a utility. The physical systems and software used by a company might be anywhere in the world.

"Your e-mail server may be in Florida; your accounting server may be in Philadelphia," Oster explains.

A cloud computing firm's customers access the cloud with their own computers, paying a monthly fee for e-mail, data backup, customer relations management, data storage, hardware usage and other services. The firm might provide those services using its own hardware or another company's—since the customers would not know the difference—and is responsible for all hardware and software maintenance and upgrades.

Expanding use

Cloud computing offers several advantages to businesses, especially small or midsize firms. As it prepared to open its Perinton offices, Seneca Financial Advisors LLC considered setting up its own computing system on-site.

"With that came a lot of up-front capital and then the ongoing costs," says Scott Lefebre, a partner in the company.

Instead, Seneca Financial, which opened its doors in February, turned to Capstone Information Technologies Inc., a Rochester firm, for cloud computing services.

"We were able to purchase space on server farms and only pay for the amount we use, instead of using capital to buy expensive equipment and having everything stored in-house," Lefebre says. "We've basically reduced our IT department to phone lines and routers."

The arrangement also gives Seneca access to better hardware than it may have had otherwise.

"Cloud systems build on much more reliable and faster systems than a business could ever want to afford," says Mike Fowler, president of Capstone.

Cloud computing firms claim that they also provide greater data security than

some companies, particularly small and midsize ones, can provide for themselves. That starts with the servers themselves and their security programs.

"It's a much higher level of security equipment than you can possibly afford yourself," Structured Technologies' Oster says.

All the Capstone servers are housed in secure facilities. The Frontier Communications CyberCenter in Rochester, which houses some of the firm's servers, has thick concrete walls, security personnel, fire suppression systems, backup power supplies and communications lines, and other security features.

Besides that, cloud computing firms usually have servers and backup systems that are ready to jump into action in the event of a communications, programming or equipment failure in another part of the network. In addition, cloud computing firms usually have their own powerful security software.

"It is our job to keep out the 'space invaders' and to make sure that the stuff is backed up and replicated," Oster says.

Users find cloud computing to be a boon. That is true for Brighton-based Harris Interactive Inc., a worldwide market research firm, which turned to Salesforce.com in 2003 to manage information about its thousands of clients.

"There's no worry for us," says Daniel Chiazza, vice president of global sales operations, from his New York office. "There's no servers, there's no maintenance, there's no headaches, there's no consultants."

The service also has helped more accurately bring together data from Harris Interactive's accounting department for North American operations, which is in Rochester, and its other divisions.

"It's been able to bridge the gap between accounting, and the sales team, and the business unit users to really make sure that we have accurate, up-to-date, up-to-the-minute information," Chiazza explains.

The savings are substantial, Salesforce.com's Leigh says.

"People are really able to deploy these applications and build these applications five times faster and at half the cost of their

Photo by Kimberly McKinzie

After turning to cloud computing, Seneca Financial Advisors has basically reduced its IT department to phone lines and routers, says Scott Lefebre, partner.

on-premises presence," he says.

Cloud computing does have disadvantages, primary among them the dependence upon fast, stable Internet connections.

"If you have an office full of people and your Internet goes down, nobody can do anything," Oster says.

At the same time, the very nature of the Internet could mitigate the effects of a local loss of access.

"Worst-case scenario: Everybody goes home, works in their kitchens," Oster says.

Moreover, not all types of companies can use the Internet to do business. Though fiber-optic transmission cables can easily accommodate the largest computer files, on-site access to the net might be much slower, due to the devices or lines used in the office by the businesses themselves. Large files, such as those used in computer-assisted design, may have difficulty making it through.

Also, not every company is a potential cloud computing user.

"It really depends on your company, the size of your company and what you do," Trueblood says.

Leigh says the average information technology department will have 25 percent of its portfolio in the cloud by 2012.

"We can harness the entire power of the Web to provide much more usable, much more saleable, much more 'performant' applications in an easy-to-govern and low-cost model," he says.

Mike Costanza is a Rochester-area freelance writer.